Complete Summary

GUIDELINE TITLE

Colorectal cancer screening.

BIBLIOGRAPHIC SOURCE(S)

Heiken JP, Bree RL, Foley WD, Gay SB, Glick SN, Huprich JE, Levine MS, Ros PR, Rosen MP, Shuman WP, Greene FL, Rockey DC, Expert Panel on Gastrointestinal Imaging. Colorectal cancer screening. [online publication]. Reston (VA): American College of Radiology (ACR); 2006. 7 p. [63 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Glick SN, Ralls PW, Balfe DM, Bree RL, DiSantis DJ, Kidd R, Levine MS, Megibow AJ, Mezwa DG, Saini S, Shuman WP, Greene FL, Laine LA, Lillemoe K. Screening for colorectal cancer. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):231-7.

The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

Colorectal cancer

GUIDELINE CATEGORY

Diagnosis
Screening

CLINICAL SPECIALTY

Family Practice
Gastroenterology
Internal Medicine
Preventive Medicine
Radiology

INTENDED USERS

Health Plans
Hospitals
Managed Care Organizations
Physicians
Utilization Management

GUIDELINE OBJECTIVE(S)

To evaluate the appropriateness of initial radiologic examinations for colorectal cancer screening

TARGET POPULATION

Adult population at average, moderate and high colorectal cancer risk levels

INTERVENTIONS AND PRACTICES CONSIDERED

1. X-ray, colon, barium enema
    - Double-contrast
    - Single-contrast
2. Computed tomography colonography (CTC)
3. Magnetic resonance colonography (MRC)

Note: Ultrasound was considered but not recommended.

MAJOR OUTCOMES CONSIDERED

- Utility of radiologic examinations in differential diagnosis and screening
- Colorectal cancer mortality rate

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

The guideline developer performed literature searches of peer-reviewed medical journals and the major applicable articles were identified and collected.

NUMBER OF SOURCE DOCUMENTS

The total number of source documents identified as the result of the literature search is not known.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Not Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not stated

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review with Evidence Tables

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on analysis of the current literature. These tables serve as a basis for developing a narrative specific to each clinical condition.

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus (Delphi)

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed to reach agreement in the formulation of the appropriateness criteria. The American College of Radiology (ACR) Appropriateness Criteria panels use a modified Delphi technique to arrive at consensus. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the topic leader(s). Questionnaires are completed by the participants in their own professional setting without influence of the other members. Voting is conducted using a scoring system from 1-9, indicating the least to the most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds is conducted and opinions are

unified to the highest degree possible. Eighty percent agreement is considered a consensus. This modified Delphi technique enables individual, unbiased expression, is economical, easy to understand, and relatively simple to conduct.

If consensus cannot be reached by the Delphi technique, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible. If "No consensus" appears in the rating column, reasons for this decision are added to the comment sections.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

Cost-effectiveness analysis has demonstrated that the double-contrast barium enema (DCBE) performed every five to ten years costs less than $22,000 per life year saved for a possible range of natural history, far below the standard of $40,000. Double-contrast barium enema every five years always cost less than $14,000 per life year saved. Even in individuals with a family history, DCBE performed every five years has been shown to be the most cost-effective screening strategy.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Criteria developed by the Expert Panels are reviewed by the American College of Radiology (ACR) Committee on Appropriateness Criteria.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

ACR Appropriateness Criteria®

Clinical Condition: Colorectal Cancer Screening

Variant 1: Average risk (age >50).

Radiologic Procedure	Appropriateness Rating	Comments
X-ray, colon, barium enema, double-contrast (every 5	7	

Radiologic Procedure	Appropriateness Rating	Comments
years if the previous screening test was negative)		
CT colonography (CTC) (every 5 years if the previous screening test was negative)	6	The role of CTC in colorectal cancer screening is still being investigated.
X-ray, colon, barium enema, single-contrast (every 5 years if the previous screening test was negative)	4	If cannot perform double-contrast BE or CTC.
MR colonography (MRC) (every 5 years if the previous screening test was negative)	4	
Appropriateness Criteria Scale **1 2 3 4 5 6 7 8 9** **1 = Least appropriate 9 = Most appropriate**		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 2: Moderate risk: personal history of adenoma or carcinoma or first-degree family history of cancer or adenoma.

Radiologic Procedure	Appropriateness Rating	Comments
X-ray, colon, barium enema, double-contrast (every 5 years if the previous screening test was negative)	7	
CT colonography (CTC) (every 5 years if the previous screening test was negative)	6	The role of CTC in colorectal cancer screening is still being investigated.
X-ray, colon, barium enema, single-contrast (every 5 years if the	4	If cannot perform double-contrast BE or CTC.

Radiologic Procedure	Appropriateness Rating	Comments
previous screening test was negative)		
MR colonography (MRC) (every 5 years if the previous screening test was negative)	4	
Appropriateness Criteria Scale **1 2 3 4 5 6 7 8 9** **1 = Least appropriate 9 = Most appropriate**		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 3: Average risk following positive fecal occult blood test (FOBT)

Radiologic Procedure	Appropriateness Rating	Comments
X-ray, colon, barium enema, double-contrast	7	
CT colonography (CTC)	6	The role of CTC in colorectal cancer screening is still being investigated.
X-ray, colon, barium enema, single-contrast	4	If cannot perform double-contrast BE or CTC.
MR colonography (MRC)	4	
Appropriateness Criteria Scale **1 2 3 4 5 6 7 8 9** **1 = Least appropriate 9 = Most appropriate**		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 4: High risk: HNPCC.

Radiologic Procedure	Appropriateness Rating	Comments
X-ray, colon, barium enema, double-	4	Colonoscopy preferred.

Radiologic Procedure	Appropriateness Rating	Comments
contrast (every 1-2 years at age 20, annually at age 40)		
CT colonography (CTC) (every 1-2 years at age 20, annually at age 40)	4	Colonoscopy preferred.
X-ray, colon, barium enema, single-contrast (every 1-2 years at age 20, annually at age 40)	3	If cannot perform colonoscopy, CTC, or double-contrast BE.
MR colonography (MRC) (every 1-2 years at age 20, annually at age 40)	3	
Appropriateness Criteria Scale **1 2 3 4 5 6 7 8 9** **1 = Least appropriate 9 = Most appropriate**		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 5: High risk: ulcerative colitis or Crohn's colitis.

Radiologic Procedure	Appropriateness Rating	Comments
X-ray, colon, barium enema, double-contrast (every year)	3	Colonoscopy preferred for ability to obtain biopsies to look for dysplasia.
X-ray, colon, barium enema, double-contrast (every 2 years)	3	Colonoscopy preferred for ability to obtain biopsies to look for dysplasia.
CT colonography (CTC) (every year)	3	Colonoscopy preferred for ability to obtain biopsies to look for dysplasia.
CT colonography (CTC) (every 2 years)	3	Colonoscopy preferred for ability to obtain biopsies to look for dysplasia.
MR colonography (MRC) (every year)	3	Colonoscopy preferred for ability to obtain biopsies to look for dysplasia.

Radiologic Procedure	Appropriateness Rating	Comments
MR colonography (MRC) (every 2 years)	3	Colonoscopy preferred for ability to obtain biopsies to look for dysplasia.
X-ray, colon, barium enema, single-contrast (every year)	2	
X-ray, colon, barium enema, single-contrast (every 2 years)	2	
Appropriateness Criteria Scale **1 2 3 4 5 6 7 8 9** **1 = Least appropriate 9 = Most appropriate**		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Variant 6: Average, moderate or high risk individual after incomplete colonoscopy.

Radiologic Procedure	Appropriateness Rating	Comments
X-ray, colon, barium enema, double-contrast	8	
CT colonography (CTC)	8	
X-ray, colon, barium enema, single-contrast	5	If cannot perform double-contrast BE or CTC.
MR colonography (MRC)	4	
Appropriateness Criteria Scale **1 2 3 4 5 6 7 8 9** **1 = Least appropriate 9 = Most appropriate**		

Note: Abbreviations used in the tables are listed at the end of the "Major Recommendations" field.

Summary of Literature Review

Colorectal cancer is the second leading cause of cancer deaths in the United States. An average-risk individual has a 5% lifetime risk of developing colorectal cancer. It has long been established that detection of the disease when localized

is associated with a 5-year survival rate of approximately 80%. Also, evidence has accumulated to support the concept that almost all colorectal cancers develop from benign adenomas and that, in most cases, this process is slow, requiring an average of 10 years. However, because screening involves the exposure of healthy asymptomatic individuals to tests with the potential for physical and psychological injury and imposes a financial burden on society, the decision to promote screening requires scientific evidence that mortality can be reduced relatively safely and cost-effectively. Information extrapolated from symptomatic populations is not sufficient because of the possible influence of lead-time and length-time bias. In addition, the determination of whom to screen, how to screen, and how often to screen represents a complex integration of an individual's level of risk, the performance characteristics (sensitivity, specificity), the safety and cost of the screening options, and the natural history and prevalence of the target lesions (adenomas and carcinomas).

Current Colorectal Cancer Screening Recommendations

A number of organizations including the World Health Organization (WHO), the American Cancer Society (ACS), the U.S. Agency for Health Care Policy and Research (USAHCPR), and the U.S. Preventive Service Task Force (USPSTF) have issued or endorsed guidelines for colorectal cancer screening, which are presented as lists of options. For average-risk individuals the options include annual or biennial fecal occult blood test (FOBT), flexible sigmoidoscopy every 5 years, double-contrast barium enema every 5 years, and colonoscopy every 10 years. More specific recommendations are made for individuals who are at increased risk for colorectal neoplasia. A discussion of the nonradiologic tests for colorectal cancer screening is beyond the scope of this document. However, of the structural tests available for colorectal cancer screening, colonoscopy currently is considered to be the most sensitive and specific for detecting colorectal polyps and cancers.

Double-Contrast Barium Enema

A recent retrospective study evaluated the diagnostic yield of double-contrast barium enema (DCBE) examinations performed for colorectal cancer screening in average-risk individuals older than 50 years. The diagnostic yield was 5.1% for neoplastic lesions 1 cm or larger and 6.2% for advanced neoplastic lesions, regardless of size. These diagnostic yields fall within the lower range of those reported for screening colonoscopy (5.0% to 9.5% for colonic neoplasms 1 cm or larger and 4.6% to 11.7% for advanced colonic neoplasms, regardless of size. In addition, DCBE has been assessed in the evaluation of individuals with a positive FOBT and in the surveillance of individuals with one or more adenomas. All other information about the effectiveness of DCBE in detecting colorectal cancer is derived from symptomatic individuals. The best data on the effectiveness of the DCBE in detecting colorectal cancer comes from studies in which the imaging history of patients with colorectal cancer was reviewed. Using this methodology, the sensitivity of DCBE ranges from 75% to 95%. When considering only localized cancer, the sensitivity varies from 58% to 94%. In studies comparing DCBE to proximate endoscopy, the sensitivity has been 80%to 100%, and when used to evaluate individuals with a positive FOBT, most reports indicate a sensitivity of 75% to 80%. The sensitivity of DCBE for large adenomas has been best studied when all subjects have undergone both radiologic and endoscopic procedures. With this study design, sensitivity has ranged from 45% to 85%. In the large

study in which polypectomy was shown to reduce the incidence of cancer, most of the benefit was derived during the initial adenoma clearance. Almost one third of the entry group was selected because of a positive barium enema.

It has been determined that the specificity of DCBE for large adenomas is 96% and the negative predictive value is 98%. It is frequently suggested that the DCBE is less effective at demonstrating polyps in the rectosigmoid colon. However, well-designed studies have shown that sensitivity figures for the DCBE in this anatomic region are comparable to those in other colonic sites. The diagnostic yield of DCBE can be increased by supplementing it with flexible sigmoidoscopy. In the work-up of a positive FOBT, the combination of the two procedures detected 98% of large polyps and cancers. Whether the mortality benefit is sufficient to justify the cost, risk, and inconvenience of two tests is unknown, but that determination likely is affected by disease prevalence and risk level. As previously mentioned, screening with a DCBE and flexible sigmoidoscopy contributed to a reduction in cancer incidence in a hereditary nonpolyposis colorectal cancer (HNPCC) kindred, a group with a higher lesion distribution proximal to the reach of flexible sigmoidoscopy. Cost-effectiveness analysis has demonstrated that the DCBE performed every five to ten years costs less than $22,000 per life year saved for a possible range of natural history, far below the standard of $40,000. DCBE every five years always cost less than $14,000 per life year saved. Even in individuals with a family history, DCBE performed every five years has been shown to be the most cost-effective screening strategy.

DCBE is a safe procedure with a perforation rate of 1/25,000. The perforation rate associated with a single contrast barium enema (SCBE) is (1/10,000), flexible sigmoidoscopy (1/5,000), and diagnostic colonoscopy (1/2,000).

There is very little information on DCBE in cancer surveillance of patients with inflammatory bowel disease. In one study of 10 patients, DCBE identified 14/22 areas of dysplasia or cancer. No information on the correct identification of patients was given. However, DCBE identified four of seven areas of dysplasia occurring in endoscopically normal mucosa, suggesting that DCBE could have a complementary role in the surveillance programs.

Single-Contrast Barium Enema

A preponderance of the literature portrays a dramatically inferior performance profile for the SCBE. However, most of these studies were performed before 1970 and were published in nonradiologic journals, or focused on patients with persistent symptoms after a normal barium enema. Recent studies suggest that SCBE has the potential to be as sensitive as DCBE for cancer and large polyps. Reported sensitivity for cancer ranges from 82% to 95% and is approximately 95% for large polyps. However, because of the paucity of studies and the limitations of the study designs, questions arise about the reproducibility of the results, particularly for large polyps. In one of the FOBT trials, SCBE was used for diagnostic follow-up. The sensitivity for cancer was 80%. Most authorities question the adequacy of SCBE for evaluating the rectum and recommend supplementation with sigmoidoscopy.

Computed Tomography Colonography

Computed tomography colonography (CTC) (also known as "virtual colonoscopy") was introduced in 1994 as a noninvasive method of imaging the colon using helical CT. Except for one study that was hampered by suboptimal technique and a steep learning curve, early CTC trials performed with single-detector-row CT scanners demonstrated sensitivities of 68% to 92% and specificities of 82% to 98% for polyps 10 mm and larger. A meta-analysis of these early trials confirmed reasonably high pooled sensitivities by patient and by lesion of 88% and 81%, respectively, with a pooled specificity of 95% for polyps 10 mm and larger. More recent studies performed with 4-detector-row scanners have demonstrated sensitivities and specificities of 82% to 100% and 90% to 98%, respectively, for polyps 10 mm and larger. It is important to recognize, however, that these trials were not performed on screening populations but on individuals who were at increased risk for colorectal neoplasia. A large single institution screening trial using single-detector-row CT demonstrated individual reader sensitivities of 59% to 73% and specificities of 95% to 98% for polyps ≥10 mm. A smaller single institution screening trial using multidetector-row CT demonstrated a sensitivity of 100% for polyps ≥10 mm and larger, but in that study only three patients had polyps of that size.

Three large multicenter trials comparing multidetector-row CTC and fiberoptic colonoscopy for detecting colorectal polyps and cancers have been published. In a study of 1,233 asymptomatic average-risk individuals undergoing colorectal cancer screening, the sensitivities of CTC and colonoscopy for adenomatous polyps ≥10 mm were 94% and 88%, respectively. In the second study, which included 600 patients referred for clinically indicated colonoscopy, the sensitivities of CTC and colonoscopy for detecting patients with polyps ≥10 mm were 55% and 100%, respectively, and in the third study, which included 614 individuals at increased risk for colorectal neoplasia, the sensitivities of CTC and colonoscopy were 59% and 98%, respectively. Thus, in the evaluation of a screening population, CTC had a very high sensitivity and outperformed colonoscopy, whereas in the other two studies CTC had a low sensitivity, and colonoscopy outperformed CTC by a significant margin. These discrepant results may be related to differences in study design and reader experience. In the study in which CTC outperformed colonoscopy, the readers used a primary 3-dimensional endoluminal evaluation of the colon, whereas all other studies have used a primary 2-dimensional evaluation. In addition, that study employed stool and liquid tagging as part of the bowel preparation of all patients, whereas the other two studies did not. Furthermore, one of the other two large multicenter trials suffered from inadequate reader training. Only one of the nine centers involved in that trial had substantial prior experience with CTC, and the only requirement to be a reader was performance of at least 10 CTC procedures (without any test of accuracy). For the institution in that study with prior CTC experience, the sensitivity for polyps ≥10 mm was 82%, compared with 24% for the other eight institutions.

A recent review of a one-year experience of CTC screening for colorectal neoplasia showed that 3.9% of individuals had a polyp 1 cm or larger and 6.9% had one or more polyps 6-9 mm in diameter. Of the 71 patients who chose colonoscopy for further evaluation of these polyps, concordant lesions were found at colonoscopy in 65 (91.5% positive predictive value).

Currently, most third-party payers are providing reimbursement for screening CTC only after a failed colonoscopy or in some cases for individuals who have a contraindication to colonoscopy (e.g., those on chronic anticoagulation or with severe chronic lung disease who are at risk for undergoing sedation). Several studies have demonstrated the usefulness of CTC in individuals who have undergone an incomplete colonoscopy or in patients with an occlusive colon carcinoma.

Magnetic Resonance Colonography

Magnetic resonance colonography (MRC), which was introduced approximately 3 years after CTC, has the advantage that it does not use ionizing radiation. However, the spatial resolution of MRC is less than that of CTC, and MRC requires colonic distension with liquid (a diluted gadolinium solution for "bright lumen" [T1-weighted]) imaging or tap water for "dark lumen" (T2-weighted) imaging. Clinical studies comparing MRC with optical colonoscopy have demonstrated excellent results, with sensitivities of 93% to 100% for polyps ≥10 mm. Nevertheless, experience with MRC is extremely limited, especially outside of Europe.

Ultrasound

A study using ultrasound performed after colonic distension with rectally administered water demonstrated a sensitivity and specificity for carcinoma of 94% and 100%, respectively. In that study sensitivity and specificity for polyps >7mm were 91% and 100%, respectively. No other published reports support the reproducibility of these findings, however, and another study using the same technique reported a sensitivity of 12.5% for polyps >7 mm. Experience with this technique is extremely limited, and the procedure is not recommended for colorectal cancer screening at this time.

Role of Local Expertise

Overall, the most appropriate imaging tests for colorectal cancer screening are the DCBE and CT colonography. The choice between these two tests may depend largely on local imaging expertise and on physician and patient preference.

Abbreviations

- BE, barium enema
- CT, computed tomography
- CTC, computed tomography colonography
- HNPCC, hereditary nonpolyposis colorectal cancer
- MR, magnetic resonance
- MRC, magnetic resonance colonography

CLINICAL ALGORITHM(S)

Algorithms were not developed from criteria guidelines.

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The recommendations are based on analysis of the current literature and expert panel consensus.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Selection of appropriate radiologic imaging procedures for screening and evaluation of patients with colorectal cancer

POTENTIAL HARMS

Risk of colonic perforation:

- Double-contrast barium enema has a perforation rate of 1/25,000.
- Single contrast barium enema has a perforation rate of 1/10,000.
- Flexible sigmoidoscopy has a perforation rate of 1/5,000.
- Diagnostic colonoscopy has a perforation rate of 1/2,000.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

An American College of Radiology (ACR) Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists, and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those exams generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the U.S. Food and Drug Administration (FDA) have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Personal Digital Assistant (PDA) Downloads

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Staying Healthy

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

Heiken JP, Bree RL, Foley WD, Gay SB, Glick SN, Huprich JE, Levine MS, Ros PR, Rosen MP, Shuman WP, Greene FL, Rockey DC, Expert Panel on Gastrointestinal Imaging. Colorectal cancer screening. [online publication]. Reston (VA): American College of Radiology (ACR); 2006. 7 p. [63 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1998 (revised 2006)

GUIDELINE DEVELOPER(S)

American College of Radiology - Medical Specialty Society

SOURCE(S) OF FUNDING

The American College of Radiology (ACR) provided the funding and the resources for these ACR Appropriateness Criteria®.

GUIDELINE COMMITTEE

Committee on Appropriateness Criteria, Expert Panel on Gastrointestinal Imaging

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Panel Members: Jay P. Heiken, MD; Robert L. Bree, MD, MHSA; W. Dennis Foley, MD; Spencer B. Gay, MD; Seth N. Glick, MD; James E. Huprich, MD; Marc S. Levine, MD; Pablo R. Ros, MD, MPH; Max Paul Rosen, MD, MPH; William P. Shuman, MD; Frederick L. Greene, MD; Don C. Rockey, MD

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: Glick SN, Ralls PW, Balfe DM, Bree RL, DiSantis DJ, Kidd R, Levine MS, Megibow AJ, Mezwa DG, Saini S, Shuman WP, Greene FL, Laine LA, Lillemoe K. Screening for colorectal cancer. American College of Radiology. ACR Appropriateness Criteria. Radiology 2000 Jun;215(Suppl):231-7.

The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

GUIDELINE AVAILABILITY

Electronic copies: Available in Portable Document Format (PDF) from the American College of Radiology (ACR) Web site.

ACR Appropriateness Criteria® *Anytime*, *Anywhere*™ (PDA application). Available from the ACR Web site.

Print copies: Available from the American College of Radiology, 1891 Preston White Drive, Reston, VA 20191. Telephone: (703) 648-8900.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- ACR Appropriateness Criteria®. Background and development. Reston (VA): American College of Radiology; 2 p. Electronic copies: Available in Portable Document Format (PDF) from the American College of Radiology (ACR) Web site.

PATIENT RESOURCES

None available

NGC STATUS

This summary was completed by ECRI on March 19, 2001. The information was verified by the guideline developer on March 29, 2001. This NGC summary was updated by ECRI Institute on April 26, 2007.

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